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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/653,222

09/03/2003

Jin Li

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EXAMINER

NGUYEN, JOSEPH H

ART UNIT

PAPER NUMBER

2815

MAIL DATE

DELIVERY MODE

04/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/653,222	Applicant(s) LI, JIN	
	Examiner JOSEPH NGUYEN	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21,27 and 47-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21,27 and 47-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 21, 47-49 and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto (U.S. Publication No. 2004/0080006)

Regarding claim 21, Yamamoto discloses an imager device comprising a substrate (301, fig. 3) having a plurality of photosensitive regions (303, fig. 3); and a substantially planar microlens arrays (701, fig. 8) formed over the plurality of photosensitive regions; the microlens array comprising a first light conductor (305, fig. 3) having a plurality of concave recesses (fig. 7 and paragraph [0023]), and a second light

conductor (311, fig. 9) within each recess and over substantially planar surfaces formed between the concave recesses of the first light conductor, an upper surface of the second light conductor being substantially planar and having a top surface of the imager device (fig. 9).

Regarding claim 47, Yamamoto discloses the first light conductor (305 has a first index of refraction (paragraph [0016]) and the second light conductor (311) has a second index of refraction (paragraph [0025]) that is different from the first index of refraction.

Regarding claim 48, Yamamoto discloses the first index of refraction is less than the second index of refraction (paragraph [0025]).

Regarding claim 49, Yamamoto discloses the second light conductor is formed of a polyimide (paragraph [0025], lines 8-9).

Regarding claim 51, Yamamoto discloses a color filter (207, fig. 2) is formed below the first light conductor (paragraph [0014], lines 1-3 where color filter 207 is placed between the micro-lens 205 and the light sensitive element. Since the microlens comprises the first light conductor, the color filter that is placed below the micro-lens is also placed below the first light conductor).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 27 and 53- 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Kochi et al. (U.S. Patent No. 6,188,094).

Regarding claim 27, similar to rejection of claim 21 above, Yamamoto discloses substantially all the structure set forth in claim 27 except for readout circuitry coupled to the plurality of photosensitive regions. However, Kochi et al. discloses in figure 1 an imager device including a transfer electrode portion 104 (readout circuitry) coupled to the plurality of photosensitive regions 102 for transferring photo charges of the photoelectric conversion element 102 (column 1, lines 28-30). In view of such teaching, it would have been obvious at the time of the present invention to modify Yamamoto by including readout circuitry coupled to the plurality of photosensitive regions for transferring the photo-charges.

Regarding claim 53, Yamamoto discloses the first light conductor (305 has a first index of refraction (paragraph [0016]) and the second light conductor (311) has a second index of refraction (paragraph [0025]) that is different from the first index of refraction.

Regarding claim 54, Yamamoto discloses the first index of refraction is less than the second index of refraction (paragraph [0025]).

Regarding claim 55, Yamamoto discloses the second light conductor is formed of a polyimide (paragraph [0025], lines 8-9).

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3. Claims 52 and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto and Tenant et al. (U.S. Patent No. 6,034,407).

Regarding claim 52, similar to rejection of claim 21 above, Yamamoto discloses substantially all the structure set forth in claim 52 except for a portion of the second light conductor over the planar surface of the first light conductor having a thickness approximately equal to $\lambda/2 \cdot N$. Tennant et al. teaches the thickness of the first light (color) layer 27a can be optimized (enlarged) to minimize cross-talk from first light penetration into the second light layer 31 a(column 5, lines 60-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify Yamamoto and tenant et al. by including a portion of the second light conductor over the planar surface of the first light conductor having a thickness approximately equal to $\lambda/2 \cdot N$ so as to minimize crosstalk in an imager device, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 56, Yamamoto discloses the first light conductor (305 has a first index of refraction (paragraph [0016]) and the second light conductor (311) has a second index of refraction (paragraph [0025]) that is different from the first index of refraction.

Regarding claim 57, Yamamoto discloses the first index of refraction is less than the second index of refraction (paragraph [0025]).

Regarding claim 58, Yamamoto discloses the second light conductor is formed of a polyimide (paragraph [0025], lines 8-9).

Response to Arguments

4. Applicant's arguments with respect to claims 21, 27 and 47-58 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 8:30 am- 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. N./

/Kenneth A Parker/

Supervisory Patent Examiner, Art Unit 2815